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Occupational Analyses Series

Roofer

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Roofer

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RELATED OCCUPATIONAL TITLE

This analysis covers tasks found in the occupation having the following name, as identified by the different provinces and territories of Canada:

Roofing, Damp and Waterproofing

LIST OF OCCUPATIONAL ANALYSES

* Aircraft Gas Turbine Engine Repair and Overhaul Technician

Aircraft Structural Repair Technician (1992)

Aquaculture Technician (1977)

Arts Administrator (1989)

♦ Automotive Partsperson

♦ Automotive Service Manager

AUTOMOTIVE SERVICE TECHNICIAN (1990)

* Automotive Technician - Air-Conditioning, Engine Cooling and Heating

Automotive Technician - Automatic Transmission (1990)

* Automotive Technician - Diagnostic

Automotive Technician - Electrical/Electronics (1991)

Automotive Technician - Engine Repair and Fuel Systems (1989)

Automotive Technician - Front-End (1989)

Automotive Technician - Manual Transmission, Driveline and Brakes (1990)

BAKER (1991)

Blaster (Surface) (1987)

\+ **BOILERMAKER (1978)**

♦ **BRICKLAYER AND STONEMASON (1982)**

* **CABINETMAKER**

* **CARPENTER (1982)**

Cement Finisher (1983)

CONSTRUCTION ELECTRICIAN (1990)

COOK (1991)

* Crane Operator (1984) - Next edition will be Red Seal

Electrical Mechanic (1981)

♦ **ELECTRONICS TECHNICIAN - CONSUMER PRODUCTS**

Electronics Technician Vol. I (1986)
(Video Equipment)

Electronics Technician Vol. II (1986)
(Audio Equipment)

Electronics Technician Vol. III (1986)
(Computer Equipment)

Electronics Technician Vol. IV (1986)
(Office Equipment)

Electronics Technician Vol. VI (1986)
(Communication Equipment)

Electronics Technician Vol. VII (1986)
(Signaling Equipment)

Electronics Technician Vol. VIII (1986)
(Navigation Equipment)

Electronics Technician Vol. IX (1986)
(Video Game Equipment)

Electronics Technician Vol. X (1987)
(CADD Equipment)

Electronics Technician Vol. XI (1987)
(CAM Equipment)

Electronics Technician Vol. XII (1987)
(Robotics Equipment)

Electronics Technician Vol. XIII (1987)
(Biomedical and Laboratory Equipment)

Electronics Technician Vol. XIV (1987)
(Industrial Process-Control Equipment)

\+ Farm Equipment Mechanic (1981)

FLOORCOVERING INSTALLER (1991)

\+ Glazier (1986) - Next edition will be Red Seal

* Hairstyling and Barbering (1980) - Next edition will be Red Seal

Heating (Gas and Oil) Servicer - Commercial and Industrial (1978)

\+ **HEAVY EQUIPMENT MECHANIC (1987)**

Heavy Equipment Operator (1983)

* Home Builder - Low Rise

INDUSTRIAL ELECTRICIAN (1987)

INDUSTRIAL INSTRUMENT MECHANIC (1988)

INDUSTRIAL MECHANIC (MILLWRIGHT) (1988)

Informatics (1980)

♦ **INSULATOR (HEAT AND FROST)**

Interior Wall and Ceiling Finisher (1978)

♦ Ironworker (1977) - Next edition will be Red Seal

LINEMAN (1988)

* **MACHINIST (1984)**

Major Electrical Appliance Repairer (1984)

MOTOR VEHICLE BODY REPAIRER (1989)

♦ **MOTOR VEHICLE REPAIRER (TRUCK AND TRANSPORT) (1983)**

\+ **OIL AND SOLID FUEL HEATING MECHANIC (1986)**

♦ **PAINTER AND DECORATOR (1983)**

PLUMBER (1989)

Power Engineer (1986)

REFRIGERATION AND AIR-CONDITIONING MECHANIC (1989)

* Renovation Contractor - Residential

ROOFER (1991)

SHEET METAL WORKER (1990)

SPRINKLER SYSTEM INSTALLER (1986)

STEAMFITTER-PIPEFITTER (1989)

* Tool and Die Maker (1984) - Next edition will be Red Seal

WELDER (1989)

* new edition available - 1992-1993
♦ being processed
\+ scheduled for development or revision - 1992
RED SEAL ANALYSES ARE INDICATED IN CAPITAL BOLD LETTERS

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FOREWORD

The first National Conference on Apprenticeship in Trades and Industries, held in Ottawa in 1952, recommended that the federal government be requested to co-operate with provincial apprenticeship committees and officials in preparing analyses of a number of skilled occupations. To this end, Employment and Immigration Canada sponsors a program, under the guidance of the Canadian Council of Directors of Apprenticeship, to develop a series of analyses.

The Occupational Analysis Program has the following objectives:

- to identify and group the tasks performed by skilled workers in particular occupations;

- to identify those tasks that are performed by skilled workers in every province and territory;

- to develop instruments for use in the preparation of interprovincial standards "Red Seal" examinations and curricula for training leading to the certification of skilled workers;

- to facilitate the mobility, in Canada, of trainees and skilled workers; and

- to supply employers and employees, and their associations, industries, training institutions and governments with analyses of the tasks performed in particular occupations.

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GUIDE TO ANALYSIS

SCOPE OF ANALYSIS

This occupational analysis is directed at the roofer who installs single and multiply roofing systems, shingles, tiles, and preformed rigid sheeting. In addition, this individual waterproofs and damp-proofs horizontal, vertical and irregular surfaces.

As part of the function of installing or replacing roofing systems or materials, the roofer may be called upon to prepare the job site, remove existing roofs, prepare or replace decking, and install vapour barriers and insulation. Fire and personal safety measures are critical to this occupation.

Typically, the roofer is a member of a crew which might consist of the following individuals:

- a supervisor
- a roofing foreman/woman
- roofers
- roofers' helpers/apprentices
- labourers

The size and composition of crews will vary according to company and project size. This analysis focuses on the tasks or sub-tasks performed by the roofer which, depending on company policy and available resources, may overlap with the duties of helpers, apprentices and labourers. The consulting, supervisory and management responsibilities of the site supervisor or foreman/woman have not been included.

The duties of the roofer overlap with those of the sheet metal worker in tasks relating to the installation of flashing and metal sheeting/cladding and with the carpenter in the construction of decks of roofing projections.

Individuals in this occupation work primarily for residential, industrial and commercial roofing contractors and general contractors or they are self-employed.

DEVELOPMENT OF ANALYSIS

A draft of this analysis was developed by persons having extensive knowledge and experience in the roofer occupation.

The draft was then assigned to occupational analysts of Employment and Immigration Canada for review and edit to ensure conformity with the nationally approved format.

The analysis was then forwarded to provincial/territorial authorities for validation by roofer trade specialists. Their recommendations were assessed and incorporated in the analysis.

The final draft has been translated and printed in both official languages.

STRUCTURE OF ANALYSIS

To facilitate the understanding of the nature of the occupation, the work performed is divided into the following divisions.

A. **BLOCK** - is the largest division within the analysis and reflects a distinct operation relevant to the occupation.

B. **TASK** - is the distinct activity, that combined with others, makes up the logical and necessary steps the worker is required to perform to complete a specific assignment within a "BLOCK".

C. **SUB-TASK** - is the smallest division into which it is practical to sub-divide any work activity and, combined with others, fully describes all duties constituting a "TASK".

Enabling Objectives

That element of skill and knowledge that an individual must acquire to perform the task adequately.

Trend

Any shifts or changes in technology that affect the sub-tasks are identified under this heading.

OBSERVATIONS AND TRENDS ARISING FROM ANALYSIS

There are several current trends in the roofing industry which can be extracted from this analysis. Overall, roofers are handling more volatile chemicals which means that they must follow greater safety precautions relating to the handling, safety, storage and transportation of these materials. The use of these materials necessitates the use of more protective clothing and equipment.

Current environmental concerns mean that roofers must sort refuse and use specialized disposal bins and sites. The costs for the disposal of these materials continues to escalate.

Roofers are using more automated equipment to move materials and install roofing systems. Newer roofing materials require more care and subsequently mean that installation surfaces take greater preparation time. Also, increasing numbers of roof projections mean that roofers spend more time accommodating these features.

Consumers are becoming more energy conscious and the industry is responding to their demands with the installation of more efficient vapour barriers and insulation. There is also an urban trend towards producing more decorative roofs and ensuring that membranes, panels and siding match.

VALIDATION METHOD

At the request of the Canadian Council of Directors of Apprenticeship (CCDA), the Standardization Sub-Committee developed a new format for the validation of the national Red Seal occupational analyses.

A draft of this analysis was sent to all provinces/territories for validation. Each jurisdiction rated the sub-tasks and applied percentage ratings to blocks and tasks. This format for the validation of the national occupational analyses identifies common core tasks across Canada for a specific occupation. This feature facilitates the weighting of the Interprovincial Red Seal examinations.

DEFINITIONS

YES:	the sub-task is performed.
NO:	the sub-task is not performed.
BLOCK %:	the percentage of time a tradesperson spends performing tasks within the block in a given year, taking into consideration the complexity (importance plus difficulty) of the block.
TASK %:	the percentage of time a tradesperson spends performing each task in relation to other tasks within the block, taking into consideration the complexity (importance plus difficulty) of the task.
NV:	Not Validated by the province/territory.
ND:	Not Designated in that province/territory.

COMMON CORE

The criteria for determining common core is dependant on the performance of sub-tasks. If 70% of the responding jurisdictions (excluding NVs and NDs) perform the sub-task, it shall be considered common core.

In the analysis, Block A is reserved for safety practices. Since safety practices are a mandatory feature of all occupations, it is considered common core and ratings are not required.

Interprovincial Red Seal examinations are based on the common core identified through this validation process.

PERCENTAGE RATINGS (APPENDIX C)

In this appendix, blocks are assigned provincial and territorial percentage ratings. This figure represents the percentage of time a tradesperson spends performing all tasks within the block, in a given year.

Tasks are also assigned a percentage rating which represents the approximate time spent by a tradesperson on each task in relation to other tasks within the block.

The percentage totals, as submitted by the provinces/territories, equal 100% as do the national averages.

BLOCK PERCENTAGES (APPENDIX D)

The graph depicts the national percentages assigned to blocks in the analysis, except for Block A which is not rated.

ANALYSIS

BLOCK A SAFETY

Task 1 **Demonstrates safe working practices and techniques to ensure an injury free work site.**

Trend: Roofers are handling more hazardous and volatile chemicals, wearing more protective clothing and using more safety equipment. Increased numbers of workers are taking first aid and Workplace Hazardous Materials Information System (WHMIS) training.

	Sub-tasks	Enabling Objectives	Tools & Equipment
1.01	Advises clients and other workers of presence and location of roofing activities.	knowledge of hazards associated with on-site material and equipment knowledge of other trades on-site knowledge of potential for damage to objects in close proximity to roofing operations, such as, automobiles	
1.02	Identifies and handles hazardous materials.	knowledge of types of hazardous materials and their compositions, such as, hot asphalt, primers and solvents knowledge of the Workplace Hazardous Materials Information System (WHMIS) ability to interpret material safety data sheets for instructions on the safe handling, storage and transportation of hazardous materials knowledge of potential dangers associated with hazardous materials	

	Sub-tasks	Enabling Objectives	Tools & Equipment
		knowledge of first aid treatment for specific hazardous materials	
		ability to identify safety equipment and clothing required in handling hazardous materials	
		ability to interpret safety regulations	
		ability to sort debris	
1.03	Installs warning/caution barriers.	knowledge of types of warning/caution barriers	hammer, nails, stapler gun, staples, rope, caution tape
		knowledge of barrier materials	
		ability to recognize and position barriers around hazards, such as, hoists and kettles	
		knowledge of Occupational Health and Safety Regulations	
		ability to affix construction safety signs	
1.04	Installs barriers/railings on perimeters of buildings.	knowledge of policies and regulations regarding safety distance between building perimeter and barrier location	hammer, nails, staple gun, staples, rope, caution tape
		knowledge of specific barrier materials used for individual job sites or areas to be enclosed, such as, wood and metal	
		ability to select and position suitable sign(s) for area being enclosed	
1.05	Covers openings.	knowledge of procedures or regulations relating to covering openings	hammer, nails, staple gun, staples

	Sub-tasks	Enabling Objectives	Tools & Equipment
		ability to recognize types of openings to be covered	
		ability to select suitable materials to cover openings	
		ability to mark or sign covered openings to provide warning of potential hazards	
1.06	Wears protective clothing.	knowledge of types of protective clothing and situations where clothing is to be worn, such as, spraying, sanding and when handling toxic materials	hard hat, safety glasses, face shield, gloves, steel toed boots, safety shields
		ability to select and maintain protective clothing	
		ability to fit and adjust protective clothing	
1.07	Wears personal protective equipment.	knowledge of types of safety equipment	respirators, safety belts, harnesses, ear plugs, ear muffs
		knowledge of operating procedures of safety equipment	
		ability to assess work site and select required safety equipment	
		ability to maintain safety equipment	
		knowledge of safety regulations	
		ability to fit and adjust safety equipment	
1.08	Practices fire safety.	knowledge of fire regulations	fire extinguishers, fire blankets, stretcher,

Sub-tasks		Enabling Objectives	Tools & Equipment
		knowledge of WHMIS and occupational health and safety legislation	respirator, first aid kit
		knowledge of Workers' Compensation Board regulations and provisions for reporting fires	
		knowledge of safe handling, storage and transportation of flammable materials, liquids and gases	
		ability to operate fire extinguishers, fire blankets and respirators	
		knowledge of methods for extinguishing different types of fires	
		ability to refuel propane tanks, motorized equipment and diesel engines	
		ability to secure combustibles and propane tanks	
		ability to keep flammable materials and debris away from open flames	
1.09	Practices good housekeeping.	ability to maintain cleanliness and order in work area	brooms, sweepers, shovels
		ability to apply correct methods for storage of tools and equipment	
		ability to safely remove hazards and obstructions	
		ability to dispose of debris	
		ability to keep flammable materials and debris away from open flames	

	Sub-tasks	Enabling Objectives	Tools & Equipment
1.10	Inspects roofing equipment.	knowledge of types of roofing equipment, such as, hoists, cables, cutters, rippers, torches and burners	
		knowledge of manufacturer's operating instructions	
		knowledge of unsafe tools such as mushroomed heads, split handles, frayed cables, poor electrical connections, dull blades and bulged hoses	
		ability to inspect roofing equipment for damage or wear	
		knowledge of lifting capacities of hoists	
1.11	Maintains roofing equipment.	ability to keep roofing equipment clean, such as, hand tools, power equipment and buggies	
		ability to check and replenish oil levels on power equipment	
		ability to tighten bolts and screws	
		ability to inspect belts for wear and/or damage	
		ability to replace blades on equipment, such as, rippers and saws	
1.12	Practices safe equipment operation techniques.	knowledge of safety procedures to follow when operating equipment	cutters, chain saws, axes, concrete saws
		ability to follow manufacturer's recommended operating instructions	

	Sub-tasks	Enabling Objectives	Tools & Equipment
		ability to select and wear protective clothing and equipment, such as, face shields, steel toed shoes and safety harnesses as specified by manufacturer	
		ability to set up ladders at correct angles and tie off	
		ability to practice care in operating hot kettles so that injuries, such as, burns and scalds are avoided	
1.13	Employs universal hand signals.	knowledge of universal hand signals for use with crane operation	
		ability to identify work place hazards, such as, overhead wires	
		ability to select positions for placement of equipment and materials	
		knowledge of safety procedures to follow when signalling crane operators	
1.14	Maintains physical fitness.	knowledge of the physical demands of the roofing occupation	
		knowledge of methods of keeping physically fit through exercise and diet	
		ability to assess and maintain personal fitness level	
1.15	Practices safe lifting procedures.	knowledge of capacity of lifting devices and weight of materials and/or equipment to be lifted	slings, chains, ropes, hoists

	Sub-tasks	Enabling Objectives	Tools & Equipment
		knowledge of safe lifting procedures so that back injuries are avoided	
		knowledge of operating procedures for hoists	
		ability to sling, rig and secure loads to be lifted	
		ability to determine if additional assistance is required	
1.16	Drains and cleans kettles and tankers.	knowledge of potential for explosion or fires when kettles and tankers are not drained and cleaned on a regular basis	gloves, face shields, masks
		knowledge of procedures required to drain and clean kettles and tankers	
		knowledge of safety equipment and protective clothing required for draining and cleaning kettles and tankers	
		ability to practice care when handling hot asphalt	
1.17	Reports accidents to proper authority.	ability to note location, time and individuals involved and sequence of events associated with accident	
		ability to note any violations of safety regulations and legislations	
		ability to convey details of accident to proper authority in a clear and concise manner	
1.18	Applies first aid.	ability to take charge in emergency situations, such	first aid kit,

Sub-tasks	Enabling Objectives	Tools & Equipment
	as, evacuation, crowd control, notifying emergency personnel	stretcher, respirator
	ability to remove hazardous obstacles from location	
	knowledge of location and contents of first aid kit	
	ability to perform basic first aid, such as, artificial respiration, mouth to mouth resuscitation, CPR, treatment for shock, wounds, burns, scalds, broken bones, eye injuries and bleeding	
	ability to determine if additional assistance is required	

BLOCK B ROOFING PRACTICES AND PROCEDURES IN PREPARATION FOR ROOFING

Task 2 Prepares a safe and labour efficient job site.

Trend: Safety standards are having an increasing impact on job site preparation. Sites are cleaner, equipment is more automated and less physical labour is required.

	Sub-tasks	Enabling Objectives	Tools & Equipment
2.01	Inspects roof surface and structure.	knowledge of roofing materials, deck construction and deck surfaces	

Sub-tasks	Enabling Objectives	Tools & Equipment
	ability to check the condition of welds, crimping, trusses or bracing and joints	
	ability to check concrete for smoothness, curing and composition	
	ability to identify improper or unfinished roof surfaces	
	ability to identify unsafe or unfinished roof structures	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

Sub-tasks	Enabling Objectives	Tools & Equipment
2.02 Cordons off and signs work area.	knowledge of construction safety signs	barriers, snow fence, rope, caution tape, hammer, nails, stapler, staples
	ability to recognize dangerous work areas	
	ability to fence/tape off dangerous areas or construct a cautionary barrier	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

Sub-tasks	Enabling Objectives	Tools & Equipment
2.03 Raises ladders.	knowledge of height restrictions on extension ladders	extension ladders, rope
	knowledge of ratio for height to distance of ladder from base of building	

Sub-tasks		Enabling Objectives	Tools & Equipment
		ability to position and tie-off ladders	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

2.04	Locates and positions disposal bin.	knowledge of work site rubbish ability to assess work site disposal needs ability to locate bin(s) in a central/labour efficient position	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	yes	yes	yes	yes	yes	yes	NV	ND

2.05	Spots kettle or tanker.	knowledge of safe kettle operation and set up knowledge of safe tanker operation and set up ability to assess work site asphalt needs and locate kettle or tanker in an easily accessible location ability to ensure that position of kettle or tanker will result in easy accessibility to delivery pipe on roof ability to firm up ground under kettle or tanker and level the equipment	jacks, lumber, metal plates, tampers

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	yes	yes	yes	yes	yes	yes	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
2.06	Locates and positions fire fighting equipment.	knowledge of fire equipment operation and procedures ability to check for valid inspection dates on fire extinguishers ability to operate fire extinguishers ability to assess work site potential fire fighting needs and position equipment in an easily accessible location	dry chemical extinguishers, pails of loose dry chemical, water hoses

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

2.07	Hooks up asphalt delivery pipe and pump line.	knowledge of circulating pump operation ability to connect pipe segments ability to position delivery pipe ability to attach pump line to tanker	wrenches, screwdrivers, pliers

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

2.08	Inspects kettle/ tanker for condensation.	knowledge of kettle/tanker operation knowledge of fire hazards associated with the presence of condensation in kettle/tanker	

Sub-tasks	Enabling Objectives	Tools & Equipment
	ability to check all critical kettle/tanker areas for moisture prior to ignition	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

2.09	Replenishes/fills kettles.	knowledge of kettle/tanker operation ability to fill kettle to maximum capacity with asphalt pieces	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

2.10	Fires up kettles and tankers.	knowledge of tanker/kettle operation knowledge of high temperature liquids ability to connect and ignite torches ability to heat asphalt to required temperature ability to monitor and regulate asphalt temperature	thermometer, igniter

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
2.11	Sets up compressors, pumps and spray equipment for cold processing.	knowledge of cold processing techniques ability to start compressors and fill spray equipment ability to test spray equipment	pipe wrenches, pliers, screwdrivers

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	yes	yes	NV	ND

2.12	Spots the crane.	knowledge of crane operation ability to assess work site material and equipment transportation needs ability to identify the most efficient location for crane	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	yes	yes	NV	ND

2.13	Sets up hoists.	knowledge of operation of hand or power hoists, such as, hand, cable, swing, hydraulic and monorail ability to position hoist on a solid base so joists are not damaged ability to secure hoist to wall ability to select appropriate ballast	hand hoist, cable hoist, swing hoist, hydraulic hoist, monorail, fasteners

Sub-tasks	Enabling Objectives	Tools & Equipment
	ability to assemble hand or power operated hoists so that decking is not damaged and hoist is secure	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

2.14	Locates and secures chute for re-roofing.	knowledge of chute sizes ability to assess work site chute needs when removing old roofing ability to locate chute in easily accessible location ability to align chute with dempster ability to anchor chute to wall	hammer, fasteners

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	yes	yes	yes	yes	yes	yes	NV	ND

2.15	Installs safety and warning barriers.	knowledge of installation procedures of safety and warning barriers knowledge of types of safety and warning barriers ability to recognize dangerous work areas ability to measure, construct and position warning barriers and safety covers over work site openings	caution tape, wood/metal/ plastic covers, hammer, saw, fasteners, cutters

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
2.16	Protects exterior of building in work area.	knowledge of tarping requirements to protect building ability to tarp building exterior where debris and kettle/tanker and hoist splash would contact building ability to clean and remove dirt and asphalt from building	tarps

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	yes	yes	NV	ND

2.17	Checks and secures hoist load and equipment.	knowledge of load limits and handling procedures ability to inspect load before raising for correct equipment and materials ability to sling/rig material and equipment	cables, ropes, chains

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

2.18	Raises material and equipment to roof.	knowledge of crane operation ability to provide hand signals to crane operator ability to operate hoists	hoists, crane

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
2.19	Locates material on roof.	knowledge of roofing materials and jobs knowledge of locations on roof that will support required materials and equipment ability to assess amount and type of work to be done ability to position materials for easy and efficient access	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	yes	yes	yes	yes	yes	yes	NV	ND

2.20	Tarps/covers materials and equipment.	knowledge of equipment and materials that require protection ability to cover materials and/or equipment at the end of the work day or when weather dictates ability to secure tarps/covers to materials and equipment to prevent wind lift	tarps, strapping, rope

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

Task 3 Removes existing roof.

Trend: Towards the use of more power equipment in removing existing roofs. Current environmental concerns mean that roofers must sort debris and use specialized disposal bins and sites. The costs for the disposal of these materials continues to escalate.

	Sub-tasks	Enabling Objectives	Tools & Equipment
3.01	Inspects underside of roof deck.	knowledge of deck construction and materials ability to identify leaks and discolouration ability to check building interior for potential hazards, such as, deteriorated decking ability to locate and assess status of vents and fixtures, such as, dropped ceilings, lighting fixtures, electrical wiring and exhaust vents ability to identify potentially hazardous roofing materials	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	no	yes	yes	yes	yes	yes	NV	ND

3.02	Installs interior protection.	knowledge of potentially dangerous internal elements, such as, lighting fixtures and fans ability to assess potential for internal water leakage, falling debris and dust during roof removal process ability to position and lay/hang protective tarps, polyethylene nets and vacuums	tarps, nets, polyethylene, screw gun, hammer, ropes

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	no	yes	yes	yes	yes	yes	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
3.03	Identifies and reports potentially hazardous conditions.	knowledge of potential health hazards, such as, chemical substances, dust and fumes knowledge of roof projections that indicate the presence of hazardous materials, such as, glass venting ability to convey information concerning potential health hazards to proper authority	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	yes	yes	NV	ND

3.04	Removes existing roof flashings.	knowledge of location of perimeter and upstand flashings ability to follow contract directions regarding the removal of identified perimeter and upstand flashings ability to pry flashing from roof perimeters and projections without damaging them knowledge of disposal requirements for metal flashing	pry bars, spades, grub hoes, hammers, screwdrivers, screw guns, axes, wrenches

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

3.05	Plugs drains and vents.	knowledge of location of open drains and vents

Sub-tasks	Enabling Objectives	Tools & Equipment
	ability to identify and block open drains and vents to prevent clogging by roofing material	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

3.06	Covers skylights and windows.	knowledge of potential for damage to skylight and windows during roofing operations ability to hang/lay protective covers over skylights and windows	tarps, hammer, fasteners

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	yes	yes	NV	ND

3.07	Removes loose gravel, debris and snow from roof.	ability to shovel snow from roof ability to sweep and collect loose gravel and debris without damaging deck ability to operate power sweepers and buggies ability to safely dispose of snow, debris and gravel from roof	power sweepers, wheelbarrows, brooms, power buggies, shovels

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
3.08	Removes ponded water.	knowledge of cause of water ponding on flat roofs ability to mop or sweep pools of water from decking knowledge of potential for deteriorated decking and roofing substrate when ponded water occurs	brooms, mops, squeegees, vacuum equipment, compressed air equipment

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

3.09	Test cuts roof membrane and/or insulation.	knowledge of roofing materials knowledge of deck and roof construction ability to verify depth and type of materials on roof, such as, insulation, vapour barrier and roof membrane	axes, power cutters, screwdrivers

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	yes	yes	yes	yes	yes	yes	NV	ND

3.10	Verifies that electrical, plumbing and gas services have been disconnected.	knowledge of location of water and gas shut offs knowledge of location of electrical panel(s) ability to check service shut offs and main electrical circuit breaker/switches ability to request the draining of plumbing and	

Sub-tasks	Enabling Objectives	Tools & Equipment
	gas pipes located under roofing material	

(NOT COMMON CORE)

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	no	yes	yes	yes	no	no	NV	ND

3.11	Cuts roof into sections.	knowledge of roofing materials knowledge of weight of materials and chute size ability to cut around roof projections ability to cut roof into manageable sections ability to operate roof cutting machine	axes, roof cutting machine, saws

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

3.12	Removes/tears off roof membrane, insulation and/or vapour barrier.	knowledge of membrane, insulation and vapour barrier removal techniques ability to remove membrane, insulation and/or vapour barrier manually as specified in contract ability to operate ripping equipment without damaging remaining layers/deck ability to remove debris from roof without injuring	shovels, tear-off bars, ripping bars, spudding shovels, scoop shovels, power rippers, wheelbarrows, power buggies

Sub-tasks	Enabling Objectives	Tools & Equipment
	other workers or damaging personal property	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

3.13	Removes unnecessary roof accessories.	knowledge of removal procedures for roof accessories, such as, plumbing vents, roof jacks, air conditioner sleepers, walkways and skylights ability to identify and remove unnecessary roof accessories without damaging surrounding area	hammers, pry bars, screwdrivers

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	yes	yes	NV	ND

3.14	Disposes of debris.	knowledge of waste disposal costs knowledge of safe handling, storage and transportation of hazardous materials and associated dangers knowledge of WHMIS and safety regulations ability to sort debris	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	no	yes	yes	yes	yes	yes	NV	ND

3.15	Prepares existing roof for tie-in.	knowledge of type of roofing and tie-in methods	

Sub-tasks	Enabling Objectives	Tools & Equipment
	ability to operate spudding machine to remove gravel or slag from built-up roof surfaces	
	ability to solvent wash roof in preparation for tie-in	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

Task 4 **Prepares/repairs roof deck surfaces.**

Trend: New materials require more care and deck surfaces take more preparation time. For both commercial and residential roofing, there are more projections (which means more stripping and preparation time), more sloped roofs and better drainage systems.

	Sub-tasks	Enabling Objectives	Tools & Equipment
4.01	Removes debris and cleans deck.	knowledge of surface requirements to guarantee adhesion of roofing materials	power sweeper, hand brooms, vacuum, shovel
		ability to operate deck cleaning equipment	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

4.02	Inspects roof decking for damaged, deteriorated wooden, steel, precast concrete	knowledge of wear and durability of roof deck materials	
		ability to assess degree of deterioration and	

	Sub-tasks	Enabling Objectives	Tools & Equipment
	and tectum sections.	requirements for replacement	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	yes	yes	yes	yes	yes	yes	NV	ND

4.03	Refastens roof decking.	knowledge of deck fastening methods ability to identify the deck surface knowledge of methods and materials for refastening metal, wood, tectum and precast concrete sections	fasteners, hammers, screw gun, impact wrench, welding equipment

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

4.04	Removes and replaces wooden, steel, precast concrete and tectum sections.	knowledge of methods used to remove and replace various roof deck surfaces, such as, wood, steel, concrete and tectum ability to determine size of section to be removed ability to cut out section to be removed ability to cut and fit replacement section	saws, torches, drills, hammers, axes, screw gun, chisels

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	yes	yes	yes	yes	yes	yes	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
4.05	Applies protective coating to corroded metal deck.	knowledge of deck primer application methods and surface requirements ability to select primer ability to prepare metal surface	roller, brush, spray gun, wire brush, wire wheels

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	no	yes	NV	ND

4.06	Repairs spalled or damaged concrete decks.	knowledge of concrete repair method ability to assess extent of concrete damage and subsequent repair needs ability to measure and mix concrete ability to hammer out, clean and refill cracks	chisels, jack hammers, hammers, brushes, brooms

(NOT COMMON CORE)

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	no	yes	no	no	no	NV	ND

4.07	Applies sealant to concrete deck.	knowledge of concrete sealant application methods and surface requirements ability to prepare concrete surfaces ability to assess deck surface condition and apply sealant	brushes, rollers, power sweepers, brooms

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	no	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
4.08	Fills unnecessary holes in deck.	knowledge of compounds/ materials used to fill deck holes knowledge of structural supports and joists ability to assess the need for and install new joists and structural supports ability to measure and fill/fit material in unnecessary holes in decking	measuring tape, fasteners, drill, hammer, saws, screwgun, roofing axe

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	no	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
4.09	Cuts openings for and reinforces projections.	knowledge of installation procedures for projections, such as, vents, pipes, drains, gas lines and skylights ability to measure and cut opening into deck surface for projections ability to install reinforcement supports, braces and joists	saws, torches, concrete coring drill, fasteners, measuring tape, hammers, screw gun

(NOT COMMON CORE)

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	no	no	yes	NV	ND

4.10	Replaces/repairs or installs parapets, blocking, nailers, cant strips, fascia and soffits.	knowledge of function of parapets, blocking, nailers, cant strips, fascia and soffits	hammer, saw, screw gun

Sub-tasks	Enabling Objectives	Tools & Equipment
	knowledge of installation and/or construction techniques for parapets, blocking, nailers, cant strips, fascia and soffits ability to assess the condition of parapets, blocking, nailers, cant strips, fascia and soffits	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	yes	yes	NV	ND

4.11	Installs nailers/ strapping for wooden shingles, tile, slate and metal sheeting.	knowledge of function and requirement for nailers/strapping knowledge of installation techniques for shingles, tile, slate and metal sheeting ability to measure, cut and fasten nailers and strapping	hammers, axes, saws, screw gun, measuring tape

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

4.12	Installs roof projections and upstands.	knowledge of installation techniques for upstands, projections and mountings, such as, sleeves, anchor bolts, curbs, sleepers and roof hatches ability to measure, construct and secure mountings, projections and upstands	drills, fasteners, wrenches, hammers

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
4.13	Installs expansion and control joints.	knowledge of installation techniques for expansion and control joints ability to measure, cut and fasten joints	saws, fasteners, hammers

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	yes	yes	NV	ND

4.14	Installs air seals.	knowledge of air seal installation techniques ability to seal roof to building envelope ability to seal vapour barrier to roof and to vapour barrier of wall	brushes, caulking tape, polyethylene

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	yes	yes	yes	yes	yes	yes	NV	ND

4.15	Applies acoustic steel deck insulation.	knowledge of purpose, weight and specifications of acoustic insulation and surface requirements ability to assess amount and weight of insulation required ability to prepare deck for insulation ability to place, align, measure, cut and adhere insulation to steel decking	knives, adhesives, brushes, rollers

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
4.16	Installs gypsum board/drywall to metal or wood deck.	knowledge of installation techniques for gypsum board ability to measure, cut and fit gypsum board to metal or wood decks	shears, drills, saws, hammers, fasteners, screw gun, roofing axe, knife, adhesives

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

4.17	Custom builds slopes or back slopes.	knowledge of false roof construction or elevation techniques to divert water from behind obstacles or to provide run off ability to measure and construct crickets, saddles and slopes using a mixture of materials, such as, concrete, asphalt and light weight concrete additives, such as, zonolite and vermiculite	trowels, shovels, forms

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

4.18	Primes concrete, dry wall or wood decks.	knowledge of deck primers, application methods and surface requirements ability to prepare surface ability to apply primer to concrete, dry wall or wood decks	sprayers, rollers, brushes, power sweepers, vacuum

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

Task 5 **Installs/repairs vapour barriers and insulation (flat or tapered).**

Trend: Towards a greater use of tapered insulation and more concern with energy conservation. A greater emphasis on aesthetics; for example, more concern with colour coordinating membranes, panels, siding and ballast.

	Sub-tasks	Enabling Objectives	Tools & Equipment
5.01	Mops down vapour barrier to concrete, wood, steel or gypsum board.	knowledge of types of vapour barriers that can be mopped down knowledge of vapour barrier application methods and surface requirements ability to place, align, cut and fit vapour barriers ability to use mechanical dispenser or hand mops to apply bitumen for either hot or cold application ability to embed vapour barrier in bitumen	mechanical dispenser, mops, knives, spray equipment

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

5.02	Glues down vapour barrier to concrete, wood, steel or gypsum board.	knowledge of types of vapour barriers which can be glued down knowledge of adhesives, their application and surface requirements ability to measure, place, align, cut and fit vapour barriers	mechanical dispenser, rollers, sprayers, knives

Sub-tasks	Enabling Objectives	Tools & Equipment
	ability to operate glue dispenser and apply glue to decking material ability to apply vapour barrier to adhesive	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

Sub-tasks	Enabling Objectives	Tools & Equipment
5.03 Fastens vapour barriers to wood deck mechanically.	knowledge of types of vapour barriers which can be fastened knowledge of fastening methods and wood deck surface requirements ability to measure, place, align, cut and fit vapour barriers ability to screw, nail, pin or clip barriers to deck	fasteners, screwdrivers, screw guns, hammers, knives, roll carriers

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	yes	yes	NV	ND

Sub-tasks	Enabling Objectives	Tools & Equipment
5.04 Applies self-adhered or heat applied vapour barriers to deck.	knowledge of types of self-adhered and heat applied barriers knowledge of self-adhered or heat applied barrier application methods and surface requirements ability to measure, place, align, cut and fit barriers	knives, roll carrier, propane fired hot roller, propane torches

Sub-tasks	Enabling Objectives	Tools & Equipment
	ability to operate torch for barrier installation	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

5.05	Loose lays vapour barriers to deck.	knowledge of types of vapour barriers that can be loose layed and surface requirements ability to allow vapour barrier to relax ability to measure, place, align, cut and fit vapour barriers	knives, roll carrier

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

5.06	Perimeter seals vapour barrier.	knowledge of vapour barrier perimeter sealing methods and surface requirements ability to measure, place, align, cut and fit vapour barriers at perimeter ability to perimeter seal by using asphalt, glue, fasteners or caulking	asphalt, glue, fasteners, caulking, caulking strips, tape, hammers, heat gun, hand mops, brushes, rollers

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

5.07	Interprets manufacturer's insulation layout	knowledge of manufacturer's terminology and recommended equipment and tools	

Sub-tasks	Enabling Objectives	Tools & Equipment
for tapered insulation.	ability to estimate amount of insulation required for a job ability to sequence and position bundles of insulation on roof ability to follow insulation layout directions and plan economical job specific layout strategies	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	yes	yes	yes	yes	yes	yes	NV	ND

5.08	Mops down insulation.	knowledge of types of insulation that can be mopped down knowledge of hot and cold material application techniques and surface requirements ability to place, align, cut and fit insulation, such as, fibreglass and fibreboard ability to apply asphalt or cold applied material to vapour barrier or decking ability to embed insulation in hot/cold applied material	hand mop, asphalt dispenser, knives, spray equipment, brushes, rollers

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
5.09	Glues insulation.	knowledge of types of insulation that can be glued knowledge of glue application techniques and surface requirements ability to measure, place, align, cut and fit insulation ability to apply glue to deck surface or vapour barrier and embed insulation	rollers, brushes, sprayers, glue applicators, knives

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
5.10	Fastens insulation mechanically.	knowledge of types of insulation that can be mechanically fastened knowledge of mechanical fastening techniques and surface requirements ability to measure, place, align, cut and fit insulation ability to screw, nail, pin or clip insulation	fasteners, hammers, knives, screw gun

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
5.11	Loose lays insulation.	knowledge of types of loose lay insulation and surface requirements	knives

Sub-tasks	Enabling Objectives	Tools & Equipment
	ability to place, align, cut and fit loose lay insulation	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

5.12	Installs water cut-off grids.	knowledge of types of cut-off grids, installation methods and surface requirements knowledge of weight and quality of felts to be used for cut-off grids ability to measure and cut felts ability to design and install cut-off grids so that the roof is sectioned and the sectioned areas are isolated from each other ability to apply caulking and tape ability to mop felts in hot asphalt	felts, caulking, caulking applicator, tape, asphalt, hand mop, rollers, brushes, spray equipment

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

BLOCK C SINGLE- AND MULTI-PLY APPLIED ROOFING SYSTEMS

Task 6 **Applies conventional and inverted built-up roofing systems using hot and cold process materials.**

Trend: They are the most widely applied roofing systems for flat or near flat roofs. Most often found in commercial, industrial and institutional applications, these require the application of three, four or five layers of saturated organic or inorganic felts to maintain water tightness.

	Sub-tasks	Enabling Objectives	Tools & Equipment
6.01	Fills mop buggy or mechanical applicator with hot asphalt.	knowledge of safety procedures associated with the handling of high temperature liquids ability to operate draw-off cocks or valves and pumping equipment ability to hoist hot processing materials	ropes, cables, hoists, mop buggy, mechanical applicators, asphalt tanker, kettle, pails

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

6.02	Transports hot asphalt or cold processing material to work site.	knowledge of safety procedures and precautions to be taken in transporting hot asphalt ability to sling and rig barrels of cold processing material ability to position hot and cold processing materials for ease of application	hot pack carriers, mop buggy, pails, barrels, lift truck dolly

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

Sub-tasks		Enabling Objectives	Tools & Equipment
6.03	Mops down roofing plies.	ability to mechanically fasten membranes to decking (back nail) knowledge of organic and inorganic felts, such as, fibreglass, polyester, cotton, wood fibre ability to start roofing felts at low points and lay subsequent plies in a shingling manner toward higher roof elevation ability to install sheets of saturated felt and apply coats of hot and cold processing material alternately until specified thickness is obtained	back mopper, spraying equipment

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

6.04	Installs vents, drains, roof jacks and roof fixtures.	ability to roof in gum boxes, pitch pots and protrusions ability to cut felts to fit closely around roof protrusions ability to install breathers and accessories	hand mops, knives, felts

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
6.05	Strips in perimeter edges and upstands.	knowledge of perimeters, such as, parapets, canted eaves and gravel stops knowledge of upstands, such as, curbs, sleepers and skylights ability to install expansion joints and cants ability to apply narrow strips of felt and processing material to all roof projections and perimeters	hand mops, mop buggies, brushes, roofing knives

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

6.06	Installs control joints.	knowledge of requirement for separation at all structural joints knowledge of possible damage that could be caused by movement of deck	trowel, brush, roller

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	yes	yes	NV	ND

6.07	Applies glaze or flood coat.	knowledge of procedures to apply glaze or flood coatings knowledge of hot and cold processing materials ability to ensure that protective coating is of sufficient depth to imbed	mops, squeegees, wheel vehicles, hot roller, spreading equipment

Sub-tasks	Enabling Objectives	Tools & Equipment
	roofing ballast or insulation	
	knowledge of coating to be applied, such as, acrylic, reflective and/or gravel	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

6.08 Installs walkways.

- knowledge of walkway materials, such as, concrete, pavers, rubber pads, wood and steel
- ability to install pedestals
- knowledge of procedures to install walkways

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	yes	yes	NV	ND

6.09 Installs separation sheets for inverted roofs.

- knowledge of location and function of separation sheets in preventing sticking of insulation
- knowledge of materials used in installation of separation sheets, such as, polyethylene and asphalt pads

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
6.10	Installs insulation for inverted roofs.	knowledge of procedures to loose lay insulation ability to select insulating material	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

6.11	Installs rafting and filter blankets for inverted roofs.	knowledge of types and purpose of filter blankets and rafting mats knowledge of standard procedures for laying rafting mats and filter blankets	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

6.12	Installs drainage bed and levellers for inverted roofs.	knowledge of proper drainage to prevent water laying beneath the insulation, floating insulation and damaged roof membrane knowledge of importance of levellers to installation of protective surface or ballast	hand level, transit, shovels, wheelbarrows, mechanical buggies

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	yes	no	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
6.13	Provides temporary water seal.	knowledge of importance of protecting joint where new and old roofing systems meet, at end of day ability to estimate amount of new roofing that can be applied within a single day	scraper, hand mop, brushes, trowel, roller

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

6.14	Installs ballast or protective surface.	knowledge of ballast materials, such as, interlocking brick, patio stones, concrete pour, sidewalk blocks, wood decks, gravel, landscaping material knowledge of protective surfaces, such as, paints, latex, acrylic aluminum roof coatings, white dolomite knowledge of function of roofing ballast to reflect heat, weigh down roof membrane and insulations against wind up lift, minimize action of wind, rain and weathering on bituminous surfaces knowledge of quantity and depth of ballast required to weigh down insulation and roofing membrane ability to spread gravel	flat scoop shovel, wheelbarrow, mechanical, buggies, levels, rakes

Sub-tasks		Enabling Objectives		Tools & Equipment
		ability to lay patio stones, sidewalk bricks and interlocking bricks		

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

6.15	Installs sheet metal flashing.	knowledge of locations requiring metal flashings, such as, perimeters, equipment bases and protrusions knowledge of function of flashing in protecting against mechanical abuse and damage to underlying membrane ability to cut, fit, finish and fasten sheet metal flashing	screws, nails, electric drill, mechanical cutters, hammers, screw gun	

(NOT COMMON CORE)

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	no	yes	no	yes	yes	yes	NV	ND

6.16	Performs flood test.	knowledge of recommended procedures and duration for testing roofing surface for leakage ability to plug drains and apply water to roof surface ability to check for water penetration and isolate leaks	hand mops, spraying equipment, mechanical, applicators, rollers, brushes	

Sub-tasks	Enabling Objectives	Tools & Equipment

ability to repair leaks

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	yes	yes	yes	yes	yes	yes	NV	ND

Task 7 **Applies modified roofing systems using hot and cold applied processes.**

Trend: The demand for modified sheet membrane roofing is increasing.

	Sub-tasks	Enabling Objectives	Tools & Equipment
7.01	Fills mop buggy or mechanical applicator with hot asphalt.	knowledge of safety procedures associated with the handling of high temperature liquids ability to operate draw-off cocks or valves and pumping equipment ability to hoist hot processing material	ropes, cables, hoists, mop buggies, mechanical applicator, asphalt tanker, kettle, pails

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

7.02	Transports hot asphalt or cold processing material to work site.	knowledge of safety precautions to be taken in transporting hot asphalt ability to sling, rig barrels of cold processing material ability to position hot/cold processing	mop buggy, hand truck, hot pack carrier, pails, barrels

Sub-tasks	Enabling Objectives	Tools & Equipment
	materials for ease of application	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

7.03	Installs base sheet.	knowledge of procedures for installing base sheet, such as, hot asphalt, cold process, peel and stick, mechanically fastened and heat applied ability to apply hot asphalt or cold process material coat to roof and imbed base sheet ability to place and apply self adhesive membranes in a single attempt ability to place and mechanically fasten base sheet to decking ability to apply heat to modified felt base sheet to adhere to roofing surface	compressor, spray equipment, rollers, hand trowels, mechanical applicator, propane fuelled and hot rollers, torch, screws, nails, hammer, screw gun, hand mops, stapler

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

7.04	Installs vents, drains, roof jacks and roof fixtures.	ability to roof in gum boxes, pitch pots and protrusions ability to cut modified felts to fit closely around roof protrusions	hand mops, knives, sprayers, felts

Sub-tasks	Enabling Objectives	Tools & Equipment
	ability to install breathers and accessories	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

7.05	Strips in perimeter edges and upstands.	knowledge of perimeters, such as, parapets, canted eaves and gravel stops knowledge of upstands such as curbs, sleepers, fire walls and skylights ability to install expansion joints ability to overlap, position and install base sheet stripping to all roof projections and perimeters using "peel and stick", mechanical fasteners, heat applied, cold processing or hot asphalt methods	compressor, spray equipment, rollers, trowels, mechanical applicator, screws, nails, hammer, stapler, screw gun, torches, hand mops, knives, brushes

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

7.06	Installs control joints.	knowledge of requirement for separation at all structural joints knowledge of possible damage that could be caused by movement of deck	brush, roller, trowel

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	yes	yes	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
7.07	Applies glaze coat.	knowledge of procedure to apply glaze or flood coat for hot or cold applied bitumen knowledge of the properties and precautions associated with cold processing materials knowledge of type of cap sheet to be applied and requirement for glaze coat ability to evenly distribute glaze coat over roofing surface	mops, squeegee, spraying equipment, applicators, hot rollers

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

7.08	Installs cap sheet.	knowledge of types and function of cap sheet surfaces, such as, sanded, granular, metal faced or polyethylene ability to back nail steep slopes ability to embed cap sheet in hot or cold applied bitumen ability to position and apply self adhesive cap sheets ability to process modified felt cap sheets that are heat applied	propane fuelled and hot rollers, torches, compressor, spray equipment, hammer, nails, screws, screw gun, stapler, hand mops, rollers, trowels

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
7.09	Installs cap sheet stripping to upstands.	knowledge of upstands, such as, curbs, sleepers, perimeter details, fire walls and other roof projections ability to cut, overlap and position modified felt cap sheet to all upstands and perimeter details ability to apply hot/cold process material to base sheet at perimeters and upstands and embed cap sheet stripping ability to apply self adhesive cap sheet stripping in a single attempt ability to heat apply cap sheet stripping	rollers, trowels, hand mop, torches, roofing knives, brushes

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

7.10	Installs separation sheets for inverted roofs.	knowledge of location and function of separation sheets in preventing stitching of insulation and isolating leaks knowledge of materials used in installation of separation sheets, such as, polyethylene and asphalt pads	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
7.11	Installs insulation for inverted roofs.	knowledge of procedures to loose lay insulation ability to select insulating materials	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

7.12	Installs rafting and filter blankets for inverted roofs.	knowledge of types and purpose of filter blankets and rafting mats knowledge of standard procedures for laying rafting mats and filter blankets	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

7.13	Installs drainage and levellers for inverted roofs.	knowledge of proper drainage to prevent water laying beneath the insulation, floating insulation and damaged roof membrane knowledge of importance of levellers to installation of protection surface or ballast	hand level, transit, shovels, wheelbarrows, mechanical buggies

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	yes	no	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
7.14	Provides temporary water seal.	knowledge of importance of protecting joint where new and old roofing systems meet, at end of day ability to estimate amount of new roofing that can be applied within a single day	hand mops, brushes, trowels, scrapers

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

7.15	Installs ballast or protective surface.	knowledge of ballast materials, such as, interlocking brick, patio stones, concrete pour, sidewalk blocks, wood decks and gravel landscaping material knowledge of protective surfaces, such as, paints, latex, acrylic aluminum roof coatings, white dolomite, prefabricated elastomeric roofing membrane knowledge of function of roofing ballast to reflect heat, weigh down roof membrane and insulations against wind up lift, minimize action of wind, rain and weathering on membrane surfaces knowledge of quantity and depth of ballast required to weigh down insulation and roofing membrane ability to spread gravel evenly	flat scoop shovel, wheelbarrow, mechanical buggies, levels, rakes

Sub-tasks		Enabling Objectives	Tools & Equipment
		ability to lay patio stones, sidewalk bricks and interlocking bricks	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

7.16	Installs sheet metal flashing.	knowledge of locations requiring metal flashings, such as, perimeters, equipment bases and protrusions knowledge of function of flashing in protecting against mechanical abuse and damage to underlying membrane ability to cut, fit, finish and fasten sheet metal flashing	screws, nails, electric drill, mechanical cutters, hammers, screw gun

(NOT COMMON CORE)

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	no	yes	no	yes	yes	yes	NV	ND

7.17	Performs flood test.	knowledge of recommended procedures and duration for testing roofing surface for leakage ability to plug drains and apply water to roof surface ability to check for water penetration and isolate leaks	hand mops, spraying equipment, mechanical applicators

Sub-tasks	Enabling Objectives	Tools & Equipment
	ability to repair leaks	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	yes	yes	yes	yes	yes	yes	NV	ND

Task 8 **Applies single-ply sheet membrane roofing systems.**

Trend: Single ply waterproof sheeting materials in either modified plastic, elastomeric or asphaltic materials have gained recognition in the roofing industry. These materials are claimed to perform better under Canadian climatic conditions and demonstrate greater resistance to puncture and damage.

	Sub-tasks	Enabling Objectives	Tools & Equipment
8.01	Prepares roofing surface for single-ply membrane.	ability to interpret drawings to determine materials to be used and method of installation ability to inspect roof to detect conditions which would affect adherence of membrane or membrane life span ability to repair roofing surface filling voids and priming surfaces to ensure adhesion ability to reinforce or separate strips over structural joints to prevent differential movement between supporting structure of roof membrane(s)	trowels, rollers, brushes

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
8.02	Cuts and fits single-ply membrane.	knowledge of types of single-ply membranes, such as, ethylene-propylene-diene monomer (EPDM) or polyvinyl chloride (PVC) ability to roll out membrane by hand and let membrane relax ability to align and size membrane to roofing substrate ability to cut roofing membrane with minimal loss of material ability to install fixtures at perimeters, upstands and preliminary fields	roll carrier, dollies, knives

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	yes	yes	NV	ND

8.03	Glues/adheres membrane to roof substrate.	knowledge of adhesives and solvents that are specified for roofing fabric being applied ability to spread adhesive material on roof substrate ability to apply prefabricated membrane to adhesion coated area	spraying equipment, rollers, trowels, mechanical applicators

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	yes	yes	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
8.04	Mechanically fastens membrane to roof substrate.	knowledge of components used to fasten membrane to roof substrate, such as, screws, nails, bars, disks and/or plates ability to maintain water tightness of membrane	screw gun, hammer

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	yes	yes	NV	ND

8.05	Loose lays membrane over specified underlayment material and insulation.	ability to roll out membrane and let material relax ability to align and fit membrane to roofing substrate ability to fasten membrane to perimeters and projections using adhesives, hot air or mechanical fasteners	roofing knives, hot air blower, hand roller, trowels, rollers, hammer, stapler, screw gun

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	yes	yes	NV	ND

8.06	Seals side laps and end joints of sheeting.	knowledge of procedures to overlap and seal joints ability to inspect and note flaws in lapped joints ability to seal side laps and end joints using adhesives, hot air, sealants or mechanical fasteners	hot air blower, hand roller, trowels, brushes, rollers, hand mops, hammer, screw gun

Sub-tasks		Enabling Objectives		Tools & Equipment
		ability to perform repairs to membrane		

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	yes	yes	NV	ND

8.07	Seals roof perimeters, upstands, projections and counter flashing.	ability to cut and fit membrane around roof projections, such as, witches hats and pipe boots and roof upstands, such as, curbs and sleepers ability to seal membranes using hot air, adhesives, sealants and mechanical fasteners	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	yes	yes	NV	ND

8.08	Installs walkways.	knowledge of walkway materials, such as, concrete pavers, rubber pads, wood and steel ability to install pedestals knowledge of procedures to install walkways	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
8.09	Installs separation sheets for inverted roofs.	knowledge of location and function of separation sheets in preventing floating and wind lift of insulation and isolating leaks knowledge of materials used in installation of separated sheets, such as, polyethylene and asphalt pads	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

8.10	Installs insulation for inverted roofs.	knowledge of procedures to loose lay insulation ability to select insulating materials	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

8.11	Installs rafting and filter blankets for inverted roofs.	knowledge of types and purpose of filter blankets and rafting mats knowledge of standard procedures for laying rafting mats and filter blankets	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
8.12	Installs drainage and levellers for inverted roofs.	knowledge of proper drainage to prevent water laying beneath the insulation, floating insulation and damaged roof membrane knowledge of importance of levellers to installation of protection surface or ballast	hand level, transit, shovels, wheelbarrows, mechanical buggies

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	yes	no	NV	ND

8.13	Provides temporary water seal.	knowledge of importance of protecting joint where new and old roofing systems meet, at end of day ability to estimate amount of new roofing that can be applied within a single day	hand mops, brushes, trowels, scrapers

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	yes	yes	NV	ND

8.14	Installs ballast or protective surface.	knowledge of ballast materials, such as, interlocking brick, patio stones, concrete pour, sidewalk blocks, wood decks and landscaping gravel material knowledge of protective surfaces, such as, paints, latex, acrylic aluminum roof coatings, white dolomite, prefabricated	flat scoop shovel, wheelbarrow, mechanical, buggies, levels, rakes

Sub-tasks	Enabling Objectives	Tools & Equipment
	elastomeric roofing membrane	
	knowledge of function of roofing ballast to reflect heat, weigh down roof membrane and insulations against wind up-lift, minimize action of wind, rain and weathering on membrane surfaces	
	knowledge of quantity and depth of ballast required to weigh down insulation and roofing membrane	
	ability to spread gravel evenly	
	ability to lay patio stones, sidewalk bricks and interlocking bricks	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

8.15	Installs sheet metal flashing.	knowledge of locations requiring metal flashings, such as, perimeters, equipment bases and protrusions	screws, nails, electric drill, mechanical cutters, hammers, screw gun
		knowledge of function of flashing in protecting against mechanical abuse and damage to underlying membrane	
		ability to cut, fit, finish and fasten sheet metal flashing	

(NOT COMMON CORE)

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	no	yes	no	yes	yes	yes	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
8.16	Performs flood test.	knowledge of recommended procedures and duration for testing roofing surface for leakage ability to plug drains and apply water to roof surface ability to check for water penetration and isolate leaks ability to repair leaks	hand mops, spraying equipment, mechanical applicators

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	no	yes	yes	yes	yes	yes	NV	ND

BLOCK D SHINGLES, TILES AND PRE-FORMED SHEETING MATERIALS

Task 9 **Applies shingles to new or existing buildings, including asphalt, fibreglass, metal, wood, SBS modified, slate and cement fibre shingles.**

Trend: There is a greater diversity of shingles, both in their composition and their specified life spans.

	Sub-tasks	Enabling Objectives	Tools & Equipment
9.01	Installs starters and drip edges.	knowledge of starter strip measurement and installation methods knowledge of the function of a starter strip in strengthening the perimeter shingles against erosion	hammer, hatchet, fasteners, air gun, cutters, measuring tape

Sub-tasks	Enabling Objectives	Tools & Equipment
	knowledge of surface requirements for shingling, starter and drip edge installation ability to measure and cut vinyl or metal starters and drip edges ability to mechanically fasten vinyl or metal starters and drip edges	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

Sub-tasks	Enabling Objectives	Tools & Equipment
9.02 Installs eaves and gable protection.	knowledge of eaves and gable protection devices and installation methods knowledge of surface requirements for eaves and gable protectors ability to measure, cut and fit protectors, such as, polyfilm, organic felts, mastic and modified sheets ability to fasten, glue or apply "peel and stick" protectors	trowel, brush, roller, air gun, fasteners, knives, hammer, measuring tape

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

Sub-tasks	Enabling Objectives	Tools & Equipment
9.03 Installs underlayments.	knowledge of types of underlayments, installation methods and surface requirements	trowel, brush, roller, hot air gun, fasteners, knives, hammer, measuring tape

Sub-tasks		Enabling Objectives		Tools & Equipment
		ability to measure, cut and fit underlayments, such as, polyfilm, organic felts, mastic and modified sheets ability to determine underlayment required for sloped roofs ability to interlace underlayment for installation of wooden shakes ability to fasten, glue or heat apply underlayments		

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

9.04	Installs valleys, saddles and back pan underlayments.	knowledge of types of underlayments, installation methods and surface requirements knowledge of placement of valleys, saddles and back pans ability to measure, cut and tightly fit underlayments with rubber covers and plastic cement around roof projections ability to fasten or glue underlayment to valleys, saddles and back pans	knives, hammer, fasteners, trowel, measuring tape

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
9.05	Fastens slate and interlocking shingles.	knowledge of grades and types of slate knowledge of slate natural and artificial knowledge of slate shingle installation methods and roofing bed requirements, such as strapping ability to install interlocking shingles and/or wire hooked shingles to strapping ability to use slate punch/spiked hammer ability to follow chalk lines to maintain straight edges and rows	hatchet, fasteners, slaters punch, cutters, planes

(NOT COMMON CORE)

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	no	yes	yes	yes	no	yes	NV	ND

9.06	Fastens shingles including wood, metal, fibreglass, asphalt and SBS modified.	knowledge of grades and types of wooden shingles and shakes knowledge of shingle installation methods and roofing bed requirements, such as, fastening existing shingles and removing damaged shingles and strapping ability to trim, cut and fit shingles ability to fasten shingles with nails, staples and adhesives	fasteners, hammers, air gun, rollers, brushes, knives, hand and skill saws, planes

Sub-tasks	Enabling Objectives	Tools & Equipment
	ability to follow chalk lines to maintain straight edges and rows	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	yes	yes	NV	ND

9.07	Offsets, overlaps and fastens courses of shingles.	knowledge of shingle installation techniques ability to put down level chalk lines ability to install offset courses of overlapping shingles ability to follow chalk lines to maintain straight edges and rows ability to install double edge of overlapping shingles along eave edge	fasteners, hammers, levels, air gun, rollers, brushes, knives, slaters punch, hand and skill saws, planes, measuring tape

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	yes	yes	NV	ND

9.08	Trims and fits shingles to roof projections, hips, ridges, valleys and projection flashings.	knowledge of shingle cutting and fitting techniques to accommodate roof projections and flashings ability to install projection flashings while shingling	fasteners, hammers, air gun, rollers, brushes, knives, hand and skill saws, planes, measuring tape

Sub-tasks	Enabling Objectives	Tools & Equipment
	ability to measure, cut and trim shingles for roof projections and flashings	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	yes	yes	NV	ND

9.09	Installs ridge cap and/or hip cap or ridge vent	knowledge of ridge or hip cap and ridge vent installation techniques and surface requirements ability to identify the most exposed roof areas ability to trim, cut and fit shingles to form caps ability to overlap and fasten shingles along ridge of roof	mechanical fasteners, hatchets, hammers, shears

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	yes	yes	NV	ND

9.10	Installs sheet metal flashing.	knowledge of sheet metal flashing installation techniques and uses ability to measure, cut, and fit sheet metal flashing for projections, such as, vents, chimneys, counter walls and caps ability to fasten sheet metal flashing	fasteners, hammers, shears, measuring tape

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	no	yes	yes	yes	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
9.11	Installs snow rails and snow guards.	knowledge of function and installation techniques for snow rails and snow guards ability to select, position and interlock snow rails and snow guards ability to bolt, seal or weld rails and guards	drills, shears, torch, fasteners, measuring tape

(NOT COMMON CORE)

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	no	yes	yes	no	yes	no	NV	ND

Task 10 **Applies tiles, such as, clay, cement, steel, fibreglass and cement fibre.**

Trend: Towards an increased use of tile roofing systems in residential sloped roofs.

	Sub-tasks	Enabling Objectives	Tools & Equipment
10.01	Installs starter strips and end closures.	knowledge of starter strip measurement and installation methods knowledge of surface requirements for starters and end closures ability to measure, cut and fit starters and end closures ability to mechanically fasten starters and end closures	hammer, shears, fasteners, measuring tape, roofer axe

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	no	yes	yes	yes	yes	yes	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
10.02	Installs eaves and gable protection.	knowledge of eaves and gable protection devices and installation methods knowledge of surface requirements for eaves and gable protectors ability to measure, cut and fit protectors, such as, polyfilm, organic felts, mastic and modified sheets ability to fasten, glue or heat apply protectors	trowel, brush, roller, air gun, fasteners, knives, measuring tape, hammer

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	yes	yes	yes	yes	yes	yes	NV	ND

10.03	Installs underlayments.	knowledge of types of underlayments, installation methods and surface requirements ability to measure, cut and fit underlayments, such as, polyfilm, organic felts, mastic and modified sheets ability to assess underlayment amount required for sloped roofs ability to fasten, glue or heat apply underlayments	trowel, brush, roller, air gun, fasteners, measuring tape, knives, hammer

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	yes	yes	yes	yes	yes	yes	NV	ND

10.04	Installs strapping or fastening strips.	knowledge of strapping installation methods and	hammers, saws, shears, measuring tape, chalk line

Sub-tasks		Enabling Objectives		Tools & Equipment
		surface and tile requirements		
		ability to measure and cut wood or metal strapping		
		ability to put down level chalk lines		
		ability to fasten strapping across the roof following level chalk lines		

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	no	yes	yes	yes	yes	yes	NV	ND

10.05	Installs valleys, saddles and back pan underlayments.	knowledge of types of underlayments, installation methods and surface requirements		knives, hammer, fasteners, trowel, measuring tape
		knowledge of position and quantity of valley, saddle and back pan underlayments		
		ability to measure, cut and tightly fit underlayments around roof projections		
		ability to fasten or glue underlayment of valleys, saddles and back pans		

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	no	yes	yes	yes	yes	yes	NV	ND

10.06	Loose lays/hangs tile from fastening strips.	knowledge of tile installation methods and surface requirements		concrete/masonry saw, hammers, measuring tape

Sub-tasks	Enabling Objectives	Tools & Equipment
	ability to measure, cut and fit tiles	
	ability to lay/hang tiles	
	ability to interlock tiles	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	no	yes	yes	yes	yes	yes	NV	ND

10.07	Fastens tiles mechanically.	knowledge of tiles that can be mechanically fastened knowledge of mechanical fastening techniques and surface requirements ability to nail tiles	hammers, fasteners, tile punch, pneumatic drill

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	no	yes	yes	yes	yes	yes	NV	ND

10.08	Offsets and overlays tiles.	knowledge of tile installation techniques ability to install offset courses of overlapping tiles ability to follow chalk lines to maintain straight edges and rows	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	no	yes	yes	yes	yes	yes	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
10.09	Cuts and fits tiles.	knowledge of tile cutting techniques and surface requirements ability to use tile cutters ability to measure, cut, place, align and fit tiles	tile cutter, measuring tape, chisel

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	no	yes	yes	yes	yes	yes	NV	ND

10.10	Installs ridge caps, hip caps and/or ridge vents.	knowledge of cap and vent installation techniques and surface requirements ability to identify the most exposed roof areas ability to overlap and fasten tiles along ridge of roof ability to trim, cut and fit tiles	hammer, fasteners, pneumatic drill, cutter

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	no	yes	yes	yes	yes	yes	NV	ND

10.11	Installs sheet metal flashing.	knowledge of sheet metal flashing installation techniques and uses ability to measure, cut, and fit sheet metal flashing for projections, such as, vents, chimneys, counter walls and caps	fasteners, hammer, shears, measuring tape

Sub-tasks		Enabling Objectives		Tools & Equipment
		ability to fasten sheet metal flashing		

(NOT COMMON CORE)

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	no	yes	no	yes	yes	yes	NV	ND

10.12	Installs snow rails and snow guards.	knowledge of function and installation techniques for snow rails and snow guards ability to select, position and interlock snow rails and snow guards ability to bolt, seal or weld rails and guards	drill, wrenches, measuring tape, torch, shears, fasteners

(NOT COMMON CORE)

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	no	yes	yes	yes	yes	no	NV	ND

Task 11 **Applies rigid pre-formed sheet roofing systems (metal, vinyl, fibreglass).**

Trend: In commercial roofing, there is a greater demand for rigid sheet roofing, particularly for its decorative effect and multitude of colours.

Sub-tasks		Enabling Objectives	Tools & Equipment
11.01	Installs starter strip and pre-formed closures.	knowledge of starter strip and closure measurement and installation methods knowledge of surface requirements for sheet roofing, starters and closures	hammer, shears, fasteners, screw guns, measuring tape

Sub-tasks		Enabling Objectives		Tools & Equipment
		ability to measure, cut and fit starter strips and closures ability to mechanically fasten starter strips and closures		

(NOT COMMON CORE)

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	no	no	NV	ND

11.02	Installs eaves and gable protection.	knowledge of eaves and gable protection devices and installation methods knowledge of surface requirements for eaves and gable protectors ability to measure, cut and fit protectors		trowel, brush, roller, air gun, fasteners, knives hammer, measuring tape

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	yes	no	NV	ND

11.03	Installs underlayments.	knowledge of types of underlayments, installation methods and surface requirements ability to determine amount of underlayment required for sloped roofs ability to measure, cut and fit underlayments ability to fasten, glue or heat apply underlayments		trowel, brush, roller, air gun, fasteners, knives, hammer, measuring tape

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	no	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
11.04	Installs strapping/fastening strips and wooden/metal battens.	knowledge of strapping and batten installation methods and surface requirements ability to measure, cut and fit wood or metal strapping ability to fasten strapping across the roof ability to fasten battens vertically along seams ability to measure, cut and space wood or metal batten ability to install insulation in metal battens	saw, hammer, fasteners, roofing cement, trowel, measuring tape

(NOT COMMON CORE)

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	no	no	NV	ND

11.05	Installs valleys, saddles and back pan underlayments.	knowledge of types of underlayments, installation methods and surface requirements knowledge of placement of underlayment for valleys, saddles and back pans ability to measure, cut and tightly fit underlayments around roof projections ability to fasten or glue underlayment to valleys, saddles and back pans	knives, hammer, fasteners, trowel, measuring tape

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	no	no	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
11.06	Fastens roofing sheets mechanically.	knowledge of sheet roofing installation techniques and surface requirements ability to economically set lines and spacing and fasten sheets to battens ability to measure, cut and fit roofing sheets ability to mechanically fasten roofing sheets	shears, screw gun, drill, screws, screwdrivers, measuring tape

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	yes	no	NV	ND

11.07	Overlaps/interlocks sheets.	knowledge of overlapping/ interlocking techniques ability to overlap sheets to prevent moisture penetration at end and side joints and walls ability to interlock sheets to prevent moisture penetration at end and side joints and walls	shears, drill, screws, screwdrivers, measuring tape, screw gun

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	yes	no	NV	ND

11.08	Seals seams.	knowledge of finishing techniques for seams, such as, standing, double standing, batten and S-lock ability to solder/weld seams	shears, drill, crimper, screws, screwdrivers, sealant, caulking gun, seam roller, torch, screw gun, hammer

Sub-tasks	Enabling Objectives	Tools & Equipment
	ability to hand or machine seam with seam roller ability to mechanically fasten seams ability to secure seams with sealants	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	yes	no	NV	ND

11.09	Cuts and fits sheets for roof projections.	knowledge of trimming and fitting techniques for sheets ability to cut, trim and fit sheets for roof projections	shears, screw gun, crimpers, drill, screws, screwdrivers, measuring tape

(NOT COMMON CORE)

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	no	no	NV	ND

11.10	Installs ridge cap, hip cap or ridge vent.	knowledge of cap and vent installation techniques and surface requirements ability to identify the most exposed roof areas ability to overlap and fasten preformed caps and vents along ridge of roof ability to trim, cut and fit caps and vents	hammers, fasteners, crimper, cutter, measuring tape

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	yes	yes	yes	no	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
11.11	Installs sheet metal flashing.	knowledge of sheet metal flashing installation techniques and uses ability to measure, cut, and fit sheet metal flashing for projections, such as, vents, chimneys, counter walls and caps ability to fasten sheet metal flashing	fasteners, hammers, shears, screw gun, measuring tape

(NOT COMMON CORE)

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	no	yes	no	yes	yes	no	NV	ND

11.12	Installs snow rails and snow guards.	knowledge of function and installation techniques for snow rails and snow guards ability to select, position, cut and interlock snow rails and guards ability to bolt, seal or weld snow rails and guards	drills, sealants, torch, fasteners, wrenches, shears, caulking gun, measuring tape

(NOT COMMON CORE)

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	no	yes	yes	no	no	no	NV	ND

BLOCK E WATERPROOFING AND DAMP-PROOFING

Task 12 Waterproofs vertical, horizontal and irregular surfaces.

Trend: Towards the greater applications of waterproofing in the protection of structures, such as, bridges, tunnels, underground garages and decks.

	Sub-tasks	Enabling Objectives	Tools & Equipment
12.01	Cleans and drys surfaces.	knowledge of surface requirements for primer and membrane application to materials, such as, concrete, wood, masonry, metal and gypsum ability to use sweepers and compressed air to prepare surfaces for waterproofing	broom, scraper, air tank, power sweepers

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

12.02	Primes surfaces.	knowledge of types of primers, application techniques and surface conditions ability to apply primer to various surfaces, such as, concrete, wood, masonry, metal and gypsum	brushes, rollers, sprayers, squeegees, torches

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

12.03	Applies membranes.	knowledge of types of membranes, such as, felts,	brooms, brushes, rollers, sprayers,

Sub-tasks	Enabling Objectives	Tools & Equipment
	fabrics, hot asphalt and rubber sheeting knowledge of membrane cutting and installation techniques, such as, layering plies of felt or fabric in hot adhesive, applications of hot rubber asphalt, hot air welding PVC sheets and sealing bituminous rubber sheets knowledge of surface requirements for membrane installation ability to measure, cut and apply membranes which are "peel and stick" or which require rolling, hot air welding or spraying	trowel, pails, squeegees, knives, hot air welding machine, propane torch, measuring tape

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

Sub-tasks	Enabling Objectives	Tools & Equipment
12.04 Applies protection board.	knowledge of types of protection boards, such as, insulation, plastic, corrugated and matted knowledge of protection board cutting and application techniques knowledge of surface requirements for protection board installation ability to measure, cut and apply protection boards	brooms, knife, mechanical buggies/hoists, measuring tape, adhesives, asphalt, hand mops, trowels, rollers, sprayers

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
12.05	Conducts water test.	knowledge of water testing methods for horizontal surfaces with rubberized asphalt, PVC and bituminous rubber membranes ability to flood surfaces and identify leaks	hoses

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	no	yes	yes	yes	yes	yes	yes	NV	ND

12.06	Installs ballast for horizontal surfaces.	knowledge of different ballast materials, weight and surface application techniques ability to select and position ballast materials, such as, rocks, gravel, pavers and interlocking bricks	shovels, wheelbarrow, hoists

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	yes	yes	yes	NV	ND

Task 13 Damp-proofs vertical, horizontal and irregular surfaces.

Trend: No apparent change.

	Sub-tasks	Enabling Objectives	Tools & Equipment
13.01	Cleans and drys surfaces.	knowledge of surface requirements for primer and membrane application to materials, such as, concrete, wood, masonry, metal and gypsum	broom, scraper, compressed air tank, power sweepers, torches

Sub-tasks	Enabling Objectives	Tools & Equipment
	ability to use sweepers and compressed air to prepare surfaces for damp-proofing	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	no	yes	yes	NV	ND

13.02	Primes surfaces.	knowledge of types of primers, application techniques and surface conditions ability to apply primer to various surfaces, such as, concrete, wood, masonry, metal and gypsum	brushes, rollers, sprayers, squeegees, torches

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	no	yes	yes	NV	ND

13.03	Applies damp-proofing emulsion to surface.	knowledge of damp-proofing emulsion substances and surface requirements knowledge of damp-proofing application techniques which include estimating the amount of surface water required ability to wet surface to meet emulsion requirements ability to spray/apply hot or cold damp-proofing emulsions on to surface	sprayers, brush, rollers, trowel

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	no	yes	yes	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
13.04	Applies solvent or chemically cut damp-proofing material.	knowledge of solvent or chemical substances, application techniques and surface requirements ability to select and apply solvent or chemically cut substances	sprayers, brushes, rollers, trowel

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	no	yes	yes	NV	ND

	Sub-tasks	Enabling Objectives	Tools & Equipment
13.05	Applies hot liquid damp-proofing.	knowledge of hot liquid substances, application techniques and surface requirements ability to spray, inject, roll, brush or trowel hot liquid substances onto surface being damp-proofed	sprayers, rollers, brushes, trowel

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
NV	NV	NV	yes	yes	yes	yes	no	yes	yes	NV	ND

APPENDICES

TOOLS AND EQUIPMENT

air and material hoses
air compressor
asphalt spreader
axe
bitumen kettle
bitumen mop
bitumen pump and piping
bitumen tanker
broom
buckets/pails
cable hoist
caulking gun
chisels
crane
disposal bins
drills
drying mop
felt laying machine
fire extinguisher
gravel spreader
grub hoes
hack saw
hammer
hand hoist
hand saw
hand spudder
hot air guns
hot roller
hydraulic hoist
industrial vacuum
ladder hoist
ladders
measuring tape
mechanical applicator
mechanical broom
mechanical hoist
mechanical scraper
mechanical spudder
mechanical tape
monorail hoist
planes
power mixers
pry bars
roll carrier
rollers
roof cutting machine
roofer knife
roofing axe
scoop shovel
screw gun
screwdriver
shears
shovels
slaters punch
spade
spray gun and nozzles
squeegee
staple gun or hammer stapler
swing hoist
tarps
thermometer
tile cutters
tin snips
torches
trowels
wheelbarrow
wheeled asphalt bucket
wrenches

Protective clothing and devices

ear muffs
ear plugs
face shield
gloves
hard hat
mask
respirators
safety equipment
safety glasses
safety boots

GLOSSARY

aggregate	synonymous with gravel in the built-up roofing field.
asphalt	although there are natural occurring asphalts, those used in roofing in Canada are from the heavy end of petroleum distillation and can be obtained in a great range of viscosities and softening points.
bitumen	a generic term describing any mixture of heavy hydrocarbons in viscous or solid form. In the roofing industry the word covers both asphalt and coal tar pitch.
capsheet	any sheet designed to be used as the exposed or finish sheet of any built-up roof assembly.
caulking cement	any of a wide range of weather resistant plastic cements suitable for caulking in any roofing application or roofing maintenance. <u>see also</u> plastic cement
cricket	<u>see</u> saddle
deck	the structural roof to the top surface of which a roof covering system is applied.
drip edge	the formed edge on metal installed at the eaves of a roof.
drippage	bituminous material that drips through the roof deck or at the edge of the roof or at roof openings.
dry sheet	an unsaturated felt or paper used in certain applications to help prevent bitumen drippage but not to be confused with a saturated felt "layed dry" meaning "unmopped".
emulsified asphalt	asphalt dispersed in water with or without a filler and held in suspension by means of an emulsifier. The fine asphalt particles cement together when the water evaporates.

expansion joint — a device used to take up lateral movement caused by expansion and contraction due to temperature changes. The separation in the structure is reflected in the roof construction by a specially constructed break in the roof membrane to allow this movement.

fabric — a woven cloth of organic or inorganic filaments treated with bitumen and, being stronger than felt, used in special flashing applications.

fascia — in present common usage, any cover board at the edge or eaves of a flat or sloping overhanging roof.

felt — a mat of organic or inorganic fibres, in sheet form impregnated with asphalt or coal tar, and normally supplied in roll form.

flashing — a continuation of the roofing proper to cover any element of the roof structure departing from the roof deck incline.

- **base flashing** — the extension of the roofing membrane over the cant and up the vertical surface.
- **cap flashing** — the covering, usually sheet metal, over the base flashing, or capping a higher wall, such as a parapet.
- **counter flashing** — sometimes used for the upper portion of the sheet metal flashing when the metal flashing is divided into two pieces. see also cap flashing
- **step flashing** — individual pieces of flashing material used to flash the sides of chimneys and dormers and similar projections on steeper sloping roofs, usually shingled. The individual pieces are overlapped and stepped up the slope.
- **thru-wall flashing** — flashing extending completely through a masonry wall to prevent water infiltrating behind lower elements of the flashing system and of the roofing system.

gravel — synonymous with aggregate in the built-up roofing field.

gravel stop	a formed strip of material, usually metal, nailed around the edges of a gravelled roof to prevent the gravel from rolling or washing off and to add a finished appearance to the roof. It may be combined with the fascia flashing.
incline	the angle made by a roof with a horizontal plane. see also slope
insulation	see roof insulation
kettle temperature	the temperature of the hot material in the kettle.
lap	the part of shingles, roll roofing or felt covered in application by the following course or ply.
• **edge lap**	the overlap of the edge of a ply over the previous ply.
• **end lap**	the overlap of the start of a roll over the end of the previous roll.
membrane	the waterproof covering. It may be a single-ply system or a multi-ply system.
mopping	a layer of hot bitumen mopped between layers of roofing.
• **full mopping**	the surface being mopped is entirely coated with a reasonably uniform coating.
• **spot mopping**	application of bitumen in staggered roughly circular spots in a fairly regular pattern to secure the first ply to certain types of roof decks.
• **strip mopping**	application of bitumen in a strip pattern recommended on certain decks.
nailing strips	strips of wood, also called nailers, on walls, curbs and steeper sloping non-nailable roof decks or all insulations to allow anchoring of flashings and, where required, the roof membrane against sliding.

plastic cement — Although all caulking cements could be called plastic cement, there is a commonly held acceptance in the roofing industry that plastic cement means bituminous cement. These can be either asphalt or coal tar base with the former much more common. These are a mixture of bitumen, asbestos fibres, filler and suitable solvent. see also caulking cement

plastic pan — also called pitch pan, pitch pocket, gum box, these comprise a flanged collar placed around items that project through the roof system. The flange is properly set into the roof membrane and the pan is well filled with plastic cement. These pans are a constant source of trouble and should only be used when no other solution can be found.

prepared roofing — a general term applied to all asphalt roll roofing and shingles.

primer — a thin liquid compound applied to a surface to improve the adhesion of a thicker liquid compound. The most commonly used is asphalt primer.

protected membrane roof — a roofing system wherein the roofing membrane is applied to the sloped structural deck and the insulation is placed outward of the membrane and ballasted. Also called inverted roof, upside down roof.

roof divider — a device used to limit the size of a continuous roof membrane. It extends only from the roof deck surface.

roof insulation — any medium or low density material suitable for and used as a part of the roofing system to reduce heat loss through the roof.

saddle — a small false roof or the elevation of a part of the roof surface used to divert water from behind an obstacle, such as a chimney.

selvage — the unsurfaced portion along a sheet of roll roofing covered by the succeeding sheet to form the lap.

sheathing paper	a medium to heavy breather-type building paper or felt, usually asphalt treated, secured to wall or roof deck before the application of the covering material. Most commonly used under shingles in residential construction.
slippage	a sliding movement between adjacent plies or layers of felt in the plane of the bitumen film separating them or between the gravel or granule surfacing and the underlying felt or felts in the bitumen pour coat or coating. It can also occur between the membrane and insulation or insulation and deck.
slope	the incline or pitch of a roof surface.
snow guards	a roofing projection that is installed on sloped roofs to ensure that large sheets of ice or snow do not fall. Similar to snow rails.
spud	synonymous with scraper. Also "to spud off" and "to scrape" are synonymous. Used with reference to removal of the gravel or slag surfacing of a built-up roof.
stapling	the use of a specially designed staple gun and staples instead of a hammer and roofing nails in roofing application.
starter strip	a roofing material applied at the eaves and serving as a base for the first course of roofing.
surfacing	any aggregate or granular material used as a protective covering on the weather surface of a roof.
tin caps	small flat metal discs with a centre nail hole used for securing roofing sheets to a nailable base to give greater resistance against wind uplift or sliding.
underlayment	<u>see</u> sheathing paper (not an acceptable underlay sheet)
vapour barrier	material used to retard the passage of vapour or moisture into the roof system where harmful condensation of vapour within the system could take place.

venting	in built-up roofing the installation of special provisions to allow the roof insulation to vent to the outside. This can be done at roof edges, at parapet walls, by installation of special roof vents and expedited by using roof insulation which will allow air and vapour movement.
wide selvage roofing	a roofing sheet surfaced on the weather side with mineral granules for only half of the width less 25mm. Formerly N.I.S.

Reference:

Canadian Roofing Contractors Association. "Glossary of Common Roofing Terms". In Roofing Specifications Manual. Ottawa : The Association, 8/1980.

PERCENTAGE RATINGS

BLOCK A **SAFETY**

Task 1 Demonstrates safe working practices and techniques to ensure an injury free work site.

BLOCK B **ROOFING PRACTICES AND PROCEDURES IN PREPARATION FOR ROOFING**

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	NV	NV	NV	55	34	20	42	25	25	10	NV	ND	30%

Task 2 Prepares a safe and labour efficient job site.

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	NV	NV	NV	10	10	12	15	21	10	15	NV	ND	13%

Task 3 Removes existing roof.

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	NV	NV	NV	40	35	37	24	32	25	35	NV	ND	33%

Task 4 Prepares/repairs roof deck surfaces.

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	NV	NV	NV	10	20	15	32	22	20	10	NV	ND	18%

Task 5 Installs/repairs vapour barriers and insulation (flat or tapered).

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	NV	NV	NV	40	35	36	29	25	45	40	NV	ND	36%

BLOCK C **SINGLE- AND MULTI-PLY APPLIED ROOFING SYSTEMS**

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	NV	NV	NV	35	45	52	36	42	60	40	NV	ND	44%

Task 6 Applies conventional and inverted built-up roofing systems using hot and cold process materials.

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	NV	NV	NV	40	40	49	61	48	50	55	NV	ND	49%

Task 7 Applies modified roofing systems using hot and cold applied processes.

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	NV	NV	NV	40	40	24	25	37	25	25	NV	ND	31%

Task 8 Applies single-ply sheet membrane roofing systems.

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	NV	NV	NV	20	20	27	14	15	25	20	NV	ND	20%

BLOCK D **SHINGLES, TILES AND PRE-FORMED SHEETING MATERIALS**

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	NV	NV	NV	5	16	18	8	20	10	40	NV	ND	17%

Task 9 Applies shingles to new or existing buildings, including asphalt, fibreglass, metal, wood, SBS modified, slate and cement fibre shingles.

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	NV	NV	NV	75	75	58	82	65	60	97	NV	ND	72%

Task 10 Applies tiles, such as, clay, cement, steel, fibreglass and cement fibre.

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	NV	NV	NV	0	15	27	13	25	35	3	NV	ND	17%

Task 11 Applies rigid pre-formed sheet roofing systems (metal, vinyl, fibreglass).

	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
%	NV	NV	NV	25	15	15	5	10	5	0	NV	ND	11%

BLOCK E WATERPROOFING AND DAMP-PROOFING

	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
%	NV	NV	NV	5	5	10	14	13	5	10	NV	ND	9%

Task 12 Waterproofs vertical, horizontal and irregular surfaces.

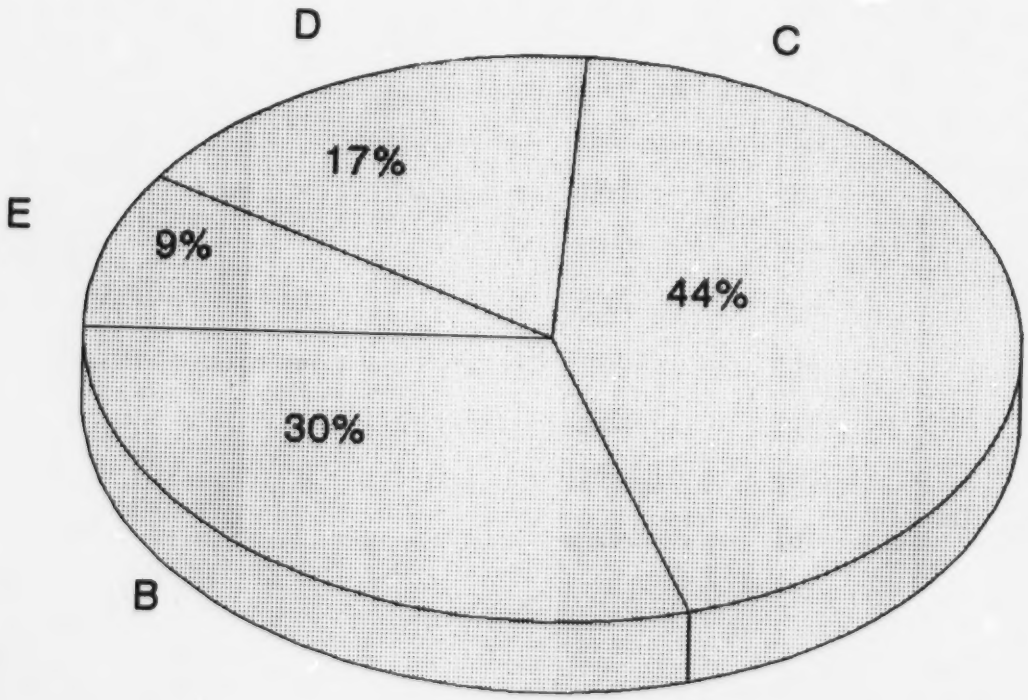
	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
%	NV	NV	NV	95	50	50	82	100	95	95	NV	ND	81%

Task 13 Damp-proofs vertical, horizontal and irregular surfaces.

	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
%	NV	NV	NV	5	50	50	18	0	5	5	NV	ND	19%

BLOCK PERCENTAGES*

Roofer



*National percentage of time a tradesperson spends performing the tasks in a block on an annual basis, taking into consideration their complexity (importance plus difficulty).

TITLES OF BLOCKS

A	SAFETY**
B	ROOFING PRACTICES AND PROCEDURES IN PREPARATION FOR ROOFING
C	SINGLE- AND MULTI-PLY APPLIED ROOFING SYSTEMS
D	SHINGLES, TILES AND PRE-FORMED SHEETING MATERIALS
E	WATERPROOFING AND DAMP-PROOFING

** Since safety practices are a mandatory feature of all occupations, they are considered common core, ratings are not required and thus Block A does not appear on the chart.